ABSTRACT OF THE DISCLOSURE

The present invention provides an improved inductor design which bounces thermal requirements with magnetic and other requirements. The package is designed based upon the desired magnetic volume and the dimensions of a primary heat dissipation surface, which is preferably designed for conductive heat transfer during operation. The other dimensions, such as the height of the package, result from these two parameters. Optimized package designs may thus be obtained which provide the desired operating temperatures, while better utilizing the magnetic volume. Package designs may include new aspect ratios, such as ratios providing a base area greater than a lateral side area. Aspect ratios between base dimensions, such as a diameter in cylindrical package and the resulting height may also be characteristic of the inductors resulting from the novel design approach.